## (43) International Publication Date 16 May 2002 (16.05.2002)

### **PCT**

# (10) International Publication Number WO 02/039642 A3

(51) International Patent Classification7:

G01R 31/08

(21) International Application Number:

PCT/US01/43017

(22) International Filing Date:

8 November 2001 (08.11.2001)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/246,806

8 November 2000 (08.11.2000)

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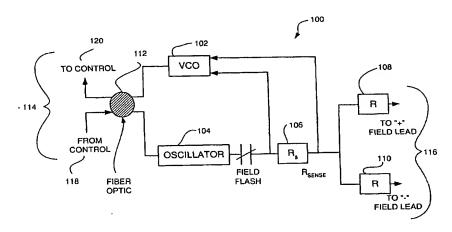
- (74) Agents: CHASKIN, Jay. L.; General Electric Company, International Patent Operations, 3135 Easton Turnpike, Fairfield, CT 06431 et al. (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

with international search report

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR DETECTING AND CALCULATING GROUND FAULT RESISTANCE



(57) Abstract: The field ground fault detector (100, 200, 500) of the present invention detects a ground fault that occurs in the field circuit and in any associated circuits galvanically connected to the field. The field ground fault detector discerns the ground resistance so that it can be monitored to detect gradual degradation of the ground resistance. The detector estimates the resistance of the ground fault and the location of the ground fault. The detector is able to estimate the location of the ground fault during system operation and during periods of non-operation. The invention utilizes a low frequency square wave oscillator (104) to permit measurement of the ground fault resistance when field voltage is not applied, to insure that there are no blind spots when the field is energized, and to provide a method for estimating the ground fault resistance. The field ground detector can differentiate between ground faults that occur on the AC side form those on the DC side of the Thyristor Bridge.

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(88) Date of publication of the international search report: 14 August 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

# INTERNATIONAL SEARCH REPORT

International application No. PCT/US01/43017

A. CLASSIFICATION OF SUBJECT MATTER  IPC(7) :G01R 31/08			
US CL : 324/509, 510 According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols)			
U.S. : 324/509, 510, 512, 551, 555			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
EAST text search; key words: ground fault and detection, location, resistance or impedance.			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where appro-	opriate, of the relevant passages	Relevant to claim No.
Y	US 4,206,398 A [ Janning] 03 June	1980 (03.06.1980), entire	1-3,6,9-17 & 20
 A	document		4,5,7-8,18,19,211
Y	US 5,363,047 A [Dresti et al.] 08 Noventire document	vember 1994 (08.11.1994),	1-3, 6, 9, 11, 15- 17 and 20
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Y	US 5,739,693 A [Pfiffner] 14 April document.	1998 (14.04.1998), entire	12 -14
	Lived in the continuation of Roy C	See patent family annex.	*
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"P" document published prior to the international filing date but later than "&" document member of the same patent family the priority date claimed			
Date of the actual completion of the international search  Date of mailing of the international search report  A BERY 2009			earch report
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Commissioner of Patents and Trademarks		Authorized officer N. Le, USPTO	eborah P. Vega
Facsimile No. (703) 305-3230  Form PCT/ISA/210 (second sheet) (July 1998)*  Telephone No. (703) 308-07Raralegal Spectra 2800  Technology Center 2800			